

### **Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

### **Listing of Claims:**

1. (Currently Amended) A purification system of exhaust gases in an internal combustion engine for purifying the exhaust gases by disposing a reaction furnace capable of reducing noxious components of the exhaust gases in an exhaust pipe of the internal combustion engine, the system comprising:

a reactor including a honeycomb carrier having a plurality of carrier cells, on each of which a photocatalyst layer is coated, in the reaction furnace[.]; and

a plasma generating means having a plurality of electrode cells and mounted at an inner end and an outer end of the honeycomb carrier;

wherein the honeycomb carrier includes a 3-way catalyst layer coated on a wall surface of each of the carrier cells and the photocatalyst layer is coated on the 3-way catalyst layer, the photocatalyst layer being activated by a plasma photic source.

2. (Previously Presented) The purification system of claim 1, wherein the photocatalyst layer is activated by a plasma photic source.

3. (Cancelled)

4. (Previously Presented) The purification system of claim 1, wherein a volume and a

number of each of the electrode cells are varied depending upon the variation of that of each of the carrier cells, the carrier cells having 100-900 numbers per unit area(1 inch.times.1 inch).

5. (Original) The purification system of claim 1, wherein each of the electrode cells of the plasma generating means is electrodes including a wire mesh formed by intersecting and arranging wires.

6. (Original) The purification system of claim 1, wherein the plasma generating means is electrodes having a regular length in horizontal direction, a cross section of each of the electrodes being in the form of a honeycomb.

7. (Original) The purification system of claim 1, wherein the plasma generating means is electrodes including a wire mesh roll.

8. (Original) The purification system of claim 1, wherein the plasma generating means is electrodes including a punched plate.

9. (Previously Presented) The purification system of any of claims 5-8, wherein the electrode is closely or distantly disposed from the honeycomb carrier.

10. (Previously Presented) The purification system of any of claims 5-8, wherein edges of each of the electrode cells are arranged to be positioned at a center of each of the carrier cells.

11. (Previously Presented) The purification system of claim 9, wherein a distance of each electrode from the honeycomb carrier is 1-40% of the length of the honeycomb carrier.

12. (Currently Amended) ~~The purification system of claim 6;~~ A purification system of exhaust gases in an internal combustion engine for purifying the exhaust gases by disposing a reaction furnace capable of reducing noxious components of the exhaust gases in an exhaust pipe of the internal combustion engine, the system comprising:

a reactor including a honeycomb carrier having a plurality of carrier cells, on each of which a photocatalyst layer is coated, in the reaction furnace; and

a plasma generating means having a plurality of electrode cells and mounted at an inner end and an outer end of the honeycomb carrier,

wherein the plasma generating means is electrodes having a regular length in horizontal direction, a cross section of each of the electrodes being in the form of a honeycomb,

wherein each cells of the electrode includes a 3-way catalyst layer coated on a surface thereof.

13. (Original) The purification system of claim 1, further including a plurality of reactors in the reaction furnace.

14. (Previously Presented) The purification system of claim 13, wherein one electrode includes a wire mesh and is distinctly disposed between the reactors, while the other electrode includes a wire mesh or a punched plate and is closely disposed at the outer ends of the reactors.

15. (Previously Presented) The purification system of claim 13, wherein one electrode includes a wire mesh roll and is distinctly disposed between the reactors, while the other electrode includes a wire mesh or a punched plate and is closely disposed at the outer ends of the reactors.

16-27. (Cancelled)

28. (New) A purification system of exhaust gases in an internal combustion engine for purifying the exhaust gases by disposing a reaction furnace capable of reducing noxious components of the exhaust gases in an exhaust pipe of the internal combustion engine, the system comprising:

a reactor including a honeycomb carrier having a plurality of carrier cells, on each of which a photocatalyst layer is coated, in the reaction furnace, wherein the photocatalyst layer coated on the honeycomb induces plasma generation within the honeycomb carrier; and

a plasma generating means having a plurality of electrode cells and mounted at an inner end and an outer end of the honeycomb carrier.

29. (New) The purification system of claim 28, wherein the photocatalyst layer is activated by a plasma photic source.

30. (New) The purification system of claim 28, wherein each of the electrode cells of the plasma generating means is electrodes including a wire mesh formed by intersecting and arranging wires.

31. (New) The purification system of claim 28, wherein the plasma generating means is electrodes having a regular length in horizontal direction, a cross section of each of the electrodes being in the form of a honeycomb.

32. (New) The purification system of claim 31, wherein the electrode is closely or distantly disposed from the honeycomb carrier.

33. (New) The purification system of claim 31, wherein edges of each of the electrode cells are arranged to be positioned at a center of each of the carrier cells.

34. (New) The purification system of claim 32, wherein a distance of each electrode from the honeycomb carrier is 1-40% of the length of the honeycomb carrier.

35. (New) The purification system of claim 28, further including a plurality of reactors in the reaction furnace.

36. (New) The purification system of claim 35, wherein one electrode includes a wire mesh and is distinctly disposed between the reactors, while the other electrode includes a wire mesh or a punched plate and is closely disposed at the outer ends of the reactors.

37. (New) The purification system of claim 35, wherein one electrode includes a wire mesh roll and is distinctly disposed between the reactors, while the other electrode includes a wire mesh or a punched plate and is closely disposed at the outer ends of

the reactors.